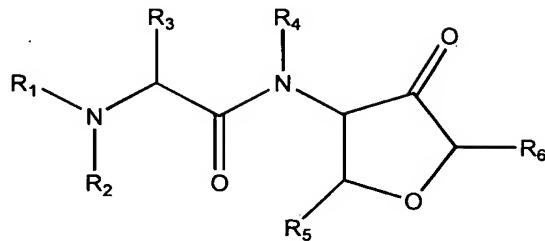


Claims

1. A compound according to formula (II):



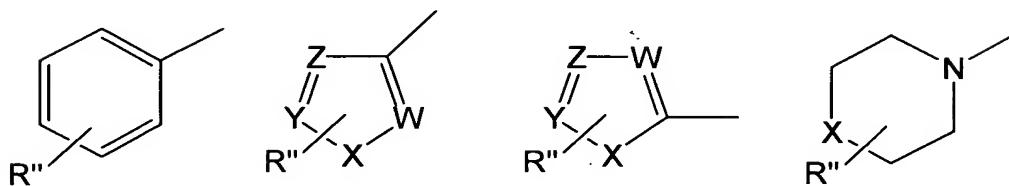
(II)

wherein:

wherein:

$R_1 = R'$, $R'C(O)$, $R'C(S)$, $R'SO_2$, $R'OC(O)$, $R'NHC(O)$

$R' =$



$X, = O, S, NH, W, Y, Z = CH, N;$

$R'' =$ single or multiple ring substitution combinations taken from:

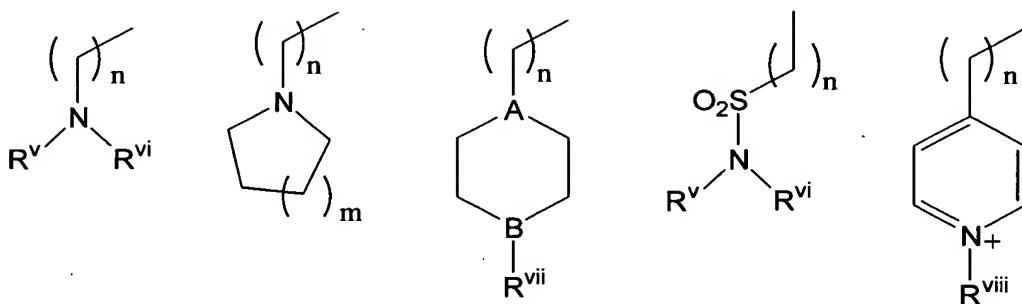
H, C1-7-alkyl, C3-6-cycloalkyl, OH, SH, amine, halogen;

$R_2, R_4 = H, C1-7-alkyl, C3-7-cycloalkyl;$

$R_3 = C1-7-alkyl, C3-7-cycloalkyl, Ar- C1-7-alkyl;$

$R_5 = C1-7-alkyl, halogen, Ar- C1-7-alkyl, C1-3-alkyl-CONR''' or R^{iv};$

$R^{iv} =$



where $n = 1-3$, $m = 1-3$;

$R^v, R^{vi} = H, C1-7\text{-alkyl}$;

$A = N, CH$;

$B = N, O, S, CH$;

$R^{vii} = \text{absent when } B = O, S; \text{ or } R^{vii} = H, C1-7\text{-alkyl when } B = N, CH$;

$R^{viii} = O, C1-7\text{-alkyl}$;

$R^6 = H, C1-7\text{-alkyl}, Ar-C1-7\text{-alkyl}, C1-3\text{-alkyl}-SO_2-R^9$,

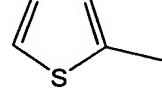
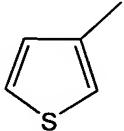
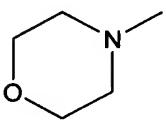
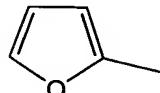
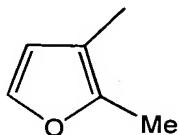
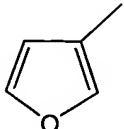
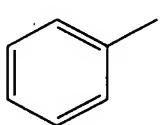
$C1-3\text{-alkyl}-C(O)-NHR^9$ or CH_2XAr ;

and pharmaceutically acceptable salts thereof.

2. A compound according to claim 1, wherein R^2 and/or R^4 are hydrogen.

3. A compound according to claim 1, wherein R^1 is $R^9C(O)$,

Where $R^9 =$

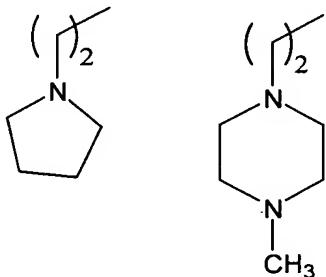


4. A compound according to claim 3, wherein R^9 is fur-3-yl or thien-3-yl

5. A compound according to claim 1, wherein R^3 is n-butyl, t-butyl, 3-(2,2-dimethylpropyl), 4-(2-methylbutyl), 4-(3,3-dimethylbutyl), 4-(3,3-dimethyl-2-methylbutyl), 4-(3-methyl-2-methylbutyl) or 5-(2-methyl-3-methylpentyl).

6. A compound according to claim 5, wherein R3 is t-butyl, 3-(2,2-dimethylpropyl) or 4-(3,3-dimethyl-2-methylbutyl).

7. A compound according to claim 1, wherein R5 is CH₃, C₂H₅, CH₂Ar, CH₂CONH₂, (CH₂)₂CONH₂,



8. A compound according to claim 7, wherein R5 is CH₃ or CH₂CH₃.

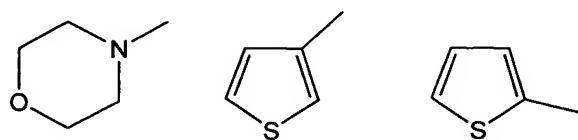
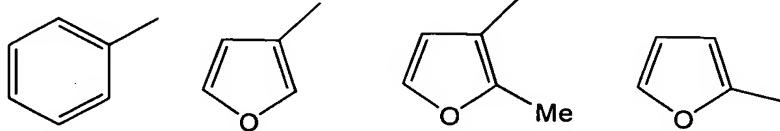
9. A compound according to claim 1, wherein R5 has (S) stereochemistry.

10. A compound according to claim 1, wherein R6 is H or CH₂XAr.

11. A compound according to claim 1, wherein

R1 = R'C(O)

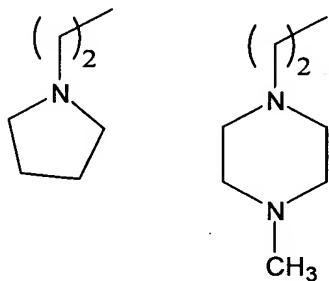
Where R' =



R2 and R4 = H;

R3 = n-butyl, t-butyl, 3-(2,2-dimethylpropyl), 4-(2-methylbutyl), 4-(3,3-dimethylbutyl), 4-(3,3-dimethyl-2-methylbutyl), 4-(3-methyl-2-methylbutyl), 5-(2-methyl-3-methylpentyl);

R5 = CH₃, C₂H₅, CH₂Ar, CH₂CONH₂, (CH₂)₂CONH₂,



R6 = H, CH₂-X-Ar or a pharmaceutically acceptable salt thereof

12. A compound which is selected from the group consisting of:

Furan-3-carboxylic acid [3,3-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)butyl]amide,

Furan-3-carboxylic acid [3,3-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)butyl]amide,

Furan-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethylbutyl]amide,

Furan-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethylbutyl}amide,

Furan-3-carboxylic acid [3,3-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)butyl]amide,

Furan-3-carboxylic acid [4-methyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Furan-3-carboxylic acid [4-methyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Furan-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-4-methylpentyl]amide,

Furan-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-4-methylpentyl}amide,

Furan-3-carboxylic acid [4-methyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Furan-3-carboxylic acid [3,3-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

Furan-3-carboxylic acid [3,3-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Furan-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethylpentyl]amide,

Furan-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethylpentyl}amide,

Furan-3-carboxylic acid [3,3-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Furan-3-carboxylic acid [3,3,4-trimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

Furan-3-carboxylic acid [3,3,4-trimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Furan-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3,4-trimethylpentyl]amide,

Furan-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3,4-trimethylpentyl}amide,

Furan-3-carboxylic acid [3,3,4-trimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Furan-3-carboxylic acid [3,4-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

Furan-3-carboxylic acid [3,4-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Furan-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,4-dimethylpentyl]amide,

Furan-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,4-dimethylpentyl}amide,

Furan-3-carboxylic acid [3,4-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Furan-3-carboxylic acid [4,5-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)hexyl]amide,

Furan-3-carboxylic acid [4,5-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)hexyl]amide,

Furan-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-4,5-dimethylhexyl]amide,

Furan-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3S-ylcarbamoyl]-4,5-dimethylhexyl}amide,

Furan-3-carboxylic acid [4,5-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3S-ylcarbamoyl)hexyl]amide,

Furan-3-carboxylic acid [3-methyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-3-phenylbutyl]amide,

Furan-3-carboxylic acid [3-methyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-3-phenylbutyl]amide,

Furan-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-3-methyl-3-phenylbutyl]amide,

Furan-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3S-ylcarbamoyl]-3-methyl-3-phenylbutyl}amide,

Furan-3-carboxylic acid [3-methyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3S-ylcarbamoyl)-3-phenylbutyl]amide,

Furan-3-carboxylic acid [3,3-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-4-phenylbutyl]amide,

Furan-3-carboxylic acid [3,3-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-4-phenylbutyl]amide,

Furan-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-3,3-dimethyl-4-phenylbutyl]amide,

Furan-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3S-ylcarbamoyl]-3,3-dimethyl-4-phenylbutyl}amide,

Furan-3-carboxylic acid [3,3-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3S-ylcarbamoyl)-4-phenylbutyl]amide,

Furan-3-carboxylic acid [3,3-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-5-phenylpentyl]amide,

Furan-3-carboxylic acid [3,3-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-5-phenylpentyl]amide,

Furan-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethyl-5-phenylpentyl]amide,

Furan-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethyl-5-phenylpentyl}amide,

Furan-3-carboxylic acid [3,3-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)-5-phenylpentyl]amide,

Thiophene-3-carboxylic acid [3,3-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)butyl]amide,

Thiophene-3-carboxylic acid [3,3-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)butyl]amide,

Thiophene-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethylbutyl]amide,

Thiophene-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethylbutyl}amide,

Thiophene-3-carboxylic acid [3,3-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)butyl]amide,

Thiophene-3-carboxylic acid [4-methyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

Thiophene-3-carboxylic acid [4-methyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Thiophene-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-4-methylpentyl]amide,

Thiophene-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-4-methylpentyl}amide,

Thiophene-3-carboxylic acid [4-methyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Thiophene-3-carboxylic acid [3,3-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

Thiophene-3-carboxylic acid [3,3-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Thiophene-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethylpentyl]amide,

Thiophene-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethylpentyl}amide,

Thiophene-3-carboxylic acid [3,3-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Thiophene-3-carboxylic acid [3,3,4-trimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

Thiophene-3-carboxylic acid [3,3,4-trimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Thiophene-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3,4-trimethylpentyl]amide,

Thiophene-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3,4-trimethylpentyl}amide,

Thiophene-3-carboxylic acid [3,3,4-trimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Thiophene-3-carboxylic acid [3,4-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

Thiophene-3-carboxylic acid [3,4-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Thiophene-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,4-dimethylpentyl]amide,

Thiophene-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,4-dimethylpentyl}amide,

Thiophene-3-carboxylic acid [3,4-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Thiophene-3-carboxylic acid [4,5-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)hexyl]amide,

Thiophene-3-carboxylic acid [4,5-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)hexyl]amide,

Thiophene-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-4,5-dimethylhexyl]amide,

Thiophene-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-4,5-dimethylhexyl}amide,

Thiophene-3-carboxylic acid [4,5-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)hexyl]amide,

Thiophene-3-carboxylic acid [3-methyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-3-phenylbutyl]amide,

Thiophene-3-carboxylic acid [3-methyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3-phenylbutyl]amide,

Thiophene-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3-methyl-3-phenylbutyl]amide,

Thiophene-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3-methyl-3-phenylbutyl}amide,

Thiophene-3-carboxylic acid [3-methyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)-3-phenylbutyl]amide,

Thiophene-3-carboxylic acid [3,3-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-4-phenylbutyl]amide,

Thiophene-3-carboxylic acid [3,3-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-4-phenylbutyl]amide,

Thiophene-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethyl-4-phenylbutyl]amide,

Thiophene-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethyl-4-phenylbutyl}amide,

Thiophene-3-carboxylic acid [3,3-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)-4-phenylbutyl]amide,

Thiophene-3-carboxylic acid [3,3-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-5-phenylpentyl]amide,

Thiophene-3-carboxylic acid [3,3-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-5-phenylpentyl]amide,

Thiophene-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethyl-5-phenylpentyl]amide,

Thiophene-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethyl-5-phenylpentyl}amide,

Thiophene-3-carboxylic acid [3,3-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)-5-phenylpentyl]amide,

2-Methylfuran-3-carboxylic acid [3,3-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)butyl]amide,

2-Methylfuran-3-carboxylic acid [3,3-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)butyl]amide,

2-Methylfuran-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethylbutyl]amide,

2-Methylfuran-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethylbutyl}amide,

2-Methylfuran-3-carboxylic acid [3,3-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)butyl]amide,

2-Methylfuran-3-carboxylic acid [4-methyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

2-Methylfuran-3-carboxylic acid [4-methyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

2-Methylfuran-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-4-methylpentyl]amide,

2-Methylfuran-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-4-methylpentyl}amide,

2-Methylfuran-3-carboxylic acid [4-methyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

2-Methylfuran-3-carboxylic acid [3,3-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

2-Methylfuran-3-carboxylic acid [3,3-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

2-Methylfuran-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethylpentyl]amide,

2-Methylfuran-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethylpentyl}amide,

2-Methylfuran-3-carboxylic acid [3,3-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

2-Methylfuran-3-carboxylic acid [3,3,4-trimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

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2-Methylfuran-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3S-ylcarbamoyl]-3,3,4-trimethylpentyl}amide,

2-Methylfuran-3-carboxylic acid [3,3,4-trimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

2-Methylfuran-3-carboxylic acid [3,4-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

2-Methylfuran-3-carboxylic acid [3,4-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

2-Methylfuran-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-3,4-dimethylpentyl]amide,

2-Methylfuran-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3S-ylcarbamoyl]-3,4-dimethylpentyl}amide,

2-Methylfuran-3-carboxylic acid [3,4-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

2-Methylfuran-3-carboxylic acid [4,5-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)hexyl]amide,

2-Methylfuran-3-carboxylic acid [4,5-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)hexyl]amide,

2-Methylfuran-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-4,5-dimethylhexyl]amide,

2-Methylfuran-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3S-ylcarbamoyl]-4,5-dimethylhexyl}amide,

2-Methylfuran-3-carboxylic acid [4,5-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3S-ylcarbamoyl)hexyl]amide,

2-Methylfuran-3-carboxylic acid [3-methyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-3-phenylbutyl]amide,

2-Methylfuran-3-carboxylic acid [3-methyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3-phenylbutyl]amide,

2-Methylfuran-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3-methyl-3-phenylbutyl]amide,

2-Methylfuran-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3-methyl-3-phenylbutyl}amide,

2-Methylfuran-3-carboxylic acid [3-methyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)-3-phenylbutyl]amide,

2-Methylfuran-3-carboxylic acid [3,3-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-4-phenylbutyl]amide,

2-Methylfuran-3-carboxylic acid [3,3-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-4-phenylbutyl]amide,

2-Methylfuran-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethyl-4-phenylbutyl]amide,

2-Methylfuran-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethyl-4-phenylbutyl}amide,

2-Methylfuran-3-carboxylic acid [3,3-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)-4-phenylbutyl]amide,

2-Methylfuran-3-carboxylic acid [3,3-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-5-phenylpentyl]amide,

2-Methylfuran-3-carboxylic acid [3,3-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-5-phenylpentyl]amide,

2-Methylfuran-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethyl-5-phenylpentyl]amide,

2-Methylfuran-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethyl-5-phenylpentyl}amide,

2-Methylfuran-3-carboxylic acid [3,3-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)-5-phenylpentyl]amide,

1*H*-Pyrrole-3-carboxylic acid [3,3-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)butyl]amide,

1*H*-Pyrrole-3-carboxylic acid [3,3-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)butyl]amide,

1H-Pyrrole-3-carboxylic acid [1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethylbutyl]amide,

1H-Pyrrole-3-carboxylic acid {1*S*-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethylbutyl}amide,

1H-Pyrrole-3-carboxylic acid [3,3-dimethyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)butyl]amide,

1H-Pyrrole-3-carboxylic acid [4-methyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

1H-Pyrrole-3-carboxylic acid [4-methyl-1*S*-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

1H-Pyrrole-3-carboxylic acid [1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-4-methylpentyl]amide,

1H-Pyrrole-3-carboxylic acid {1*S*-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-4-methylpentyl}amide,

1H-Pyrrole-3-carboxylic acid [4-methyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

1H-Pyrrole-3-carboxylic acid [3,3-dimethyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

1H-Pyrrole-3-carboxylic acid [3,3-dimethyl-1*S*-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

1H-Pyrrole-3-carboxylic acid [1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethylpentyl]amide,

1H-Pyrrole-3-carboxylic acid {1*S*-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethylpentyl}amide,

1H-Pyrrole-3-carboxylic acid [3,3-dimethyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

1H-Pyrrole-3-carboxylic acid [3,3,4-trimethyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

1H-Pyrrole-3-carboxylic acid [3,3,4-trimethyl-1*S*-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

1H-Pyrrole-3-carboxylic acid [1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3,4-trimethylpentyl]amide,

1H-Pyrrole-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3,4-trimethylpentyl}amide,

1H-Pyrrole-3-carboxylic acid [3,3,4-trimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

1H-Pyrrole-3-carboxylic acid [3,4-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

1H-Pyrrole-3-carboxylic acid [3,4-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

1H-Pyrrole-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,4-dimethylpentyl]amide,

1H-Pyrrole-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,4-dimethylpentyl}amide,

1H-Pyrrole-3-carboxylic acid [3,4-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

1H-Pyrrole-3-carboxylic acid [4,5-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)hexyl]amide,

1H-Pyrrole-3-carboxylic acid [4,5-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)hexyl]amide,

1H-Pyrrole-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-4,5-dimethylhexyl]amide,

1H-Pyrrole-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-4,5-dimethylhexyl}amide,

1H-Pyrrole-3-carboxylic acid [4,5-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)hexyl]amide,

1H-Pyrrole-3-carboxylic acid [3-methyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-3-phenylbutyl]amide,

1H-Pyrrole-3-carboxylic acid [3-methyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3-phenylbutyl]amide,

1H-Pyrrole-3-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3-methyl-3-phenylbutyl]amide,

1H-Pyrrole-3-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3-methyl-3-phenylbutyl}amide,

1H-Pyrrole-3-carboxylic acid [3-methyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)-3-phenylbutyl]amide,

1H-Pyrrole-3-carboxylic acid [3,3-dimethyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-4-phenylbutyl]amide,

1H-Pyrrole-3-carboxylic acid [3,3-dimethyl-1*S*-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-4-phenylbutyl]amide,

1H-Pyrrole-3-carboxylic acid [1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethyl-4-phenylbutyl]amide,

1H-Pyrrole-3-carboxylic acid {1*S*-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethyl-4-phenylbutyl}amide,

1H-Pyrrole-3-carboxylic acid [3,3-dimethyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)-4-phenylbutyl]amide,

1H-Pyrrole-3-carboxylic acid [3,3-dimethyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-5-phenylpentyl]amide,

1H-Pyrrole-3-carboxylic acid [3,3-dimethyl-1*S*-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-5-phenylpentyl]amide,

1H-Pyrrole-3-carboxylic acid [1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethyl-5-phenylpentyl]amide,

1H-Pyrrole-3-carboxylic acid {1*S*-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethyl-5-phenylpentyl}amide,

1H-Pyrrole-3-carboxylic acid [3,3-dimethyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)-5-phenylpentyl]amide,

N-[3,3-dimethyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)butyl]benzamide,

N-[3,3-dimethyl-1*S*-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)butyl]benzamide,

N-[1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethylbutyl]benzamide,

N-{1*S*-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethylbutyl}benzamide,

N-[3,3-dimethyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)butyl]benzamide,

N-[4-methyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]benzamide,

N-[4-methyl-1*S*-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]benzamide,
N-[1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-4-methylpentyl]benzamide,
N-{1*S*-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-4-methylpentyl}benzamide,
N-[4-methyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]benzamide,
N-[3,3-dimethyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]benzamide,
N-[3,3-dimethyl-1*S*-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]benzamide,
N-[1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethylpentyl]benzamide,
N-{1*S*-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethylpentyl}benzamide,
N-[3,3-dimethyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]benzamide,*N*-[3,3,4-trimethyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]benzamide,
N-[3,3,4-trimethyl-1*S*-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]benzamide,
N-[1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3,4-trimethylpentyl]benzamide,
N-{1*S*-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3,4-trimethylpentyl}benzamide,
N-[3,3,4-trimethyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]benzamide,
N-[3,4-dimethyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]benzamide,
N-[3,4-dimethyl-1*S*-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]benzamide,
N-[1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,4-dimethylpentyl]benzamide,
N-{1*S*-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,4-dimethylpentyl}benzamide,

N-[3,4-dimethyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]benzamide,

N-[4,5-dimethyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3*S*-ylcarbamoyl)hexyl]benzamide,

N-[4,5-dimethyl-1*S*-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)hexyl]benzamide,

N-[1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-4,5-dimethylhexyl]benzamide,

N-{1*S*-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-4,5-dimethylhexyl}benzamide,

N-[4,5-dimethyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)hexyl]benzamide,

N-[3-methyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3*S*-ylcarbamoyl)-3-phenylbutyl]benzamide,

N-[3-methyl-1*S*-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3-phenylbutyl]benzamide,

N-[1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3-methyl-3-phenylbutyl]benzamide,

N-{1*S*-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3-methyl-3-phenylbutyl}benzamide,

N-[3-methyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)-3-phenylbutyl]benzamide,

N-[3,3-dimethyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3*S*-ylcarbamoyl)-4-phenylbutyl]benzamide,

N-[3,3-dimethyl-1*S*-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-4-phenylbutyl]benzamide,

N-[1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethyl-4-phenylbutyl]benzamide,

N-{1*S*-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethyl-4-phenylbutyl}benzamide,

N-[3,3-dimethyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)-4-phenylbutyl]benzamide,

N-[3,3-dimethyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3*S*-ylcarbamoyl)-5-phenylpentyl]benzamide,

N-[3,3-dimethyl-1*S*-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-5-phenylpentyl]benzamide,

N-[1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethyl-5-phenylpentyl]benzamide,

N-{1*S*-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethyl-5-phenylpentyl}benzamide,

N-[3,3-dimethyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)-5-phenylpentyl]benzamide,

Morpholine-4-carboxylic acid [3,3-dimethyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3*S*-ylcarbamoyl)butyl]amide,

Morpholine-4-carboxylic acid [3,3-dimethyl-1*S*-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)butyl]amide,

Morpholine-4-carboxylic acid [1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethylbutyl]amide,

Morpholine-4-carboxylic acid {1*S*-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethylbutyl}amide,

Morpholine-4-carboxylic acid [3,3-dimethyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)butyl]amide,

Morpholine-4-carboxylic acid [4-methyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3*S*-ylcarbamoyl)pentyl]amide,

Morpholine-4-carboxylic acid [4-methyl-1*S*-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Morpholine-4-carboxylic acid [1*S*-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-4-methylpentyl]amide,

Morpholine-4-carboxylic acid {1*S*-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-4-methylpentyl}amide,

Morpholine-4-carboxylic acid [4-methyl-1*S*-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Morpholine-4-carboxylic acid [3,3-dimethyl-1*S*-(2*S*-methyl-4-oxo-tetrahydrofuran-3*S*-ylcarbamoyl)pentyl]amide,

Morpholine-4-carboxylic acid [3,3-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Morpholine-4-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethylpentyl]amide,

Morpholine-4-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethylpentyl}amide,

Morpholine-4-carboxylic acid [3,3-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Morpholine-4-carboxylic acid [3,3,4-trimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

Morpholine-4-carboxylic acid [3,3,4-trimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Morpholine-4-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3,4-trimethylpentyl]amide,

Morpholine-4-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3,4-trimethylpentyl}amide,

Morpholine-4-carboxylic acid [3,3,4-trimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Morpholine-4-carboxylic acid [3,4-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)pentyl]amide,

Morpholine-4-carboxylic acid [3,4-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Morpholine-4-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,4-dimethylpentyl]amide,

Morpholine-4-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,4-dimethylpentyl}amide,

Morpholine-4-carboxylic acid [3,4-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)pentyl]amide,

Morpholine-4-carboxylic acid [4,5-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)hexyl]amide,

Morpholine-4-carboxylic acid [4,5-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)hexyl]amide,

Morpholine-4-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-4,5-dimethylhexyl]amide,

Morpholine-4-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-4,5-dimethylhexyl}amide,

Morpholine-4-carboxylic acid [4,5-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)hexyl]amide,

Morpholine-4-carboxylic acid [3-methyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-3-phenylbutyl]amide,

Morpholine-4-carboxylic acid [3-methyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3-phenylbutyl]amide,

Morpholine-4-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3-methyl-3-phenylbutyl]amide,

Morpholine-4-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3-methyl-3-phenylbutyl}amide,

Morpholine-4-carboxylic acid [3-methyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)-3-phenylbutyl]amide,

Morpholine-4-carboxylic acid [3,3-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-4-phenylbutyl]amide,

Morpholine-4-carboxylic acid [3,3-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-4-phenylbutyl]amide,

Morpholine-4-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethyl-4-phenylbutyl]amide,

Morpholine-4-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethyl-4-phenylbutyl}amide,

Morpholine-4-carboxylic acid [3,3-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)-4-phenylbutyl]amide,

Morpholine-4-carboxylic acid [3,3-dimethyl-1S-(2S-methyl-4-oxo-tetrahydrofuran-3S-ylcarbamoyl)-5-phenylpentyl]amide,

Morpholine-4-carboxylic acid [3,3-dimethyl-1S-(2-ethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-5-phenylpentyl]amide,

Morpholine-4-carboxylic acid [1S-(2-carbamoylmethyl-4-oxo-tetrahydrofuran-3-ylcarbamoyl)-3,3-dimethyl-5-phenylpentyl]amide,

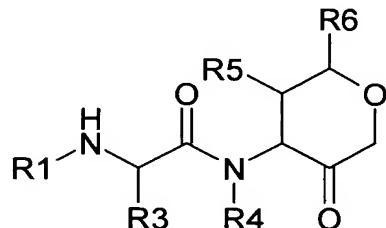
Morpholine-4-carboxylic acid {1S-[2-(2-dimethylaminoethyl)-4-oxo-tetrahydrofuran-3-ylcarbamoyl]-3,3-dimethyl-5-phenylpentyl}amide,
 Morpholine-4-carboxylic acid [3,3-dimethyl-1S-(4-oxo-2-pyrrolidin-1-ylmethyl-tetrahydrofuran-3-ylcarbamoyl)-5-phenylpentyl]amide,
 or a pharmaceutically acceptable salt thereof.

13. A pharmaceutical composition comprising a compound according to any preceding claim and a pharmaceutically acceptable carrier.

14. A method of inhibiting the cysteine protease Cathepsin S which comprises administering to a patient in need thereof an effective amount of a compound according to claim 1.

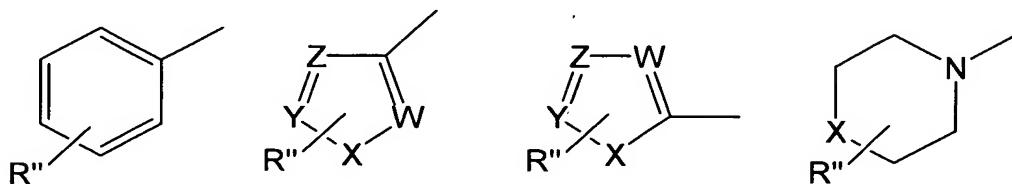
15. A method of inhibiting the cysteine protease Cathepsin S which comprises administering to a patient in need thereof an effective amount of a composition according to claim 13.

16. A compound of the formula IV



where

R1 is R'C(=O)- or R'-S(=O)2-
 R' is



X, = O, S, NH,

W, Y, Z = CH, N;

R'' = single or multiple ring substitution combinations taken from:

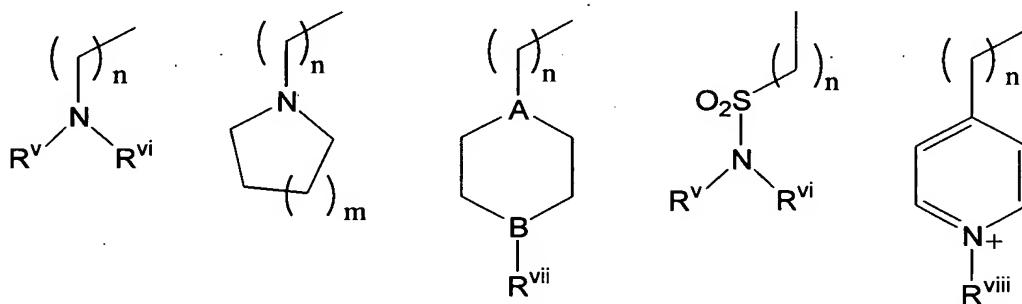
H, C1-7-alkyl, C3-6-cycloalkyl, OH, SH, amine, halogen;

R3 = C1-7-alkyl, C2-C7 alkenyl, C3-7-cycloalkyl, Ar, Ar-C1-7-alkyl, Ar-C1-C7-alkyl;

R4 = H, C1-7-alkyl, C3-7-cycloalkyl; C2-7alkenyl, Ar, ArC1-7-alkyl;

R5 = C1-7-alkyl, hydroxy- or halo-substituted C1-C7alkyl, halogen, Ar-C1-7-alkyl, C0-3-alkyl-CONR3R4 or R^{iv};

R^{iv} =



where n = 1-3, m = 1-3;

R^v, R^{vi} = H, C1-7-alkyl;

A = N, CH;

B = N, O, S, CH;

R^{vii} = absent when B = O, S; or R^{vii} = H, C1-7-alkyl when B = N, CH;

R^{viii} = O, C1-7-alkyl;

R6 = H, C1-7-alkyl, Ar-C1-7-alkyl, C1-3-alkyl-SO₂-R^{ix}, C1-3-alkyl-C(O)-NHR^{ix} or CH₂XAr;

R^{ix} is C1-7 alkyl, ArC1-7-alkyl or C3-6-cycloalkyl;

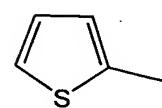
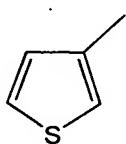
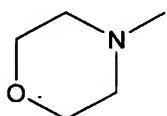
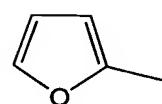
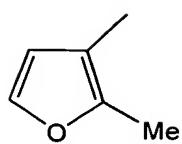
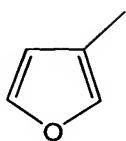
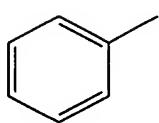
and pharmaceutically acceptable salts thereof.

17. A compound according to claim 16, wherein R4 and/or R6 are hydrogen.

18. A compound according to claim 16, wherein R1 is R'C(O).

19. A compound according to claim 18,

Where R' =



20. A compound according to claim 19, wherein R' is fur-3-yl or thien-3-yl.

21. A compound according to claim 19, wherein R' is phenyl having multiple substitutions selected from C1-7 alkyl, C3-6-cycloalkyl, OH, SH, amine and halogen.

22. A compound according to claim 21 wherein the substitutions are at the 3 and 4 position of the phenyl.

23. A compound according to claim 16 wherein R3 has the S stereochemistry.

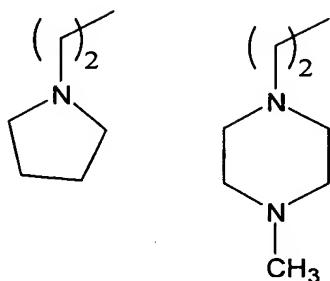
24. A compound according to claim 23, wherein R3 is n-butyl, t-butyl, 3-(2,2-dimethylpropyl), 4-(2-methylbutyl), 4-(3,3-dimethylbutyl), 4-(3,3-dimethyl-2-methylbutyl), 4-(3-methyl-2-methylbutyl) or 5-(2-methyl-3-methylpentyl).

25. A compound according to claim 24, wherein R3 is t-butyl, 3-(2,2-dimethylpropyl) or 4-(3,3-dimethyl-2-methylbutyl).

26. A compound according to claim 16, wherein R3 is C3-C6 cycloalkyl.

27. A compound according to claim 26 wherein R3 is the side chain of L-cycohexylalanine or L-cyclopentylalanine.

28. A compound according to claim 16, wherein R5 is CH₃, C₂H₅, CH₂OH, CH₂Ar, CH₂CONH₂, (CH₂)₂CONH₂,



29. A compound according to claim 28, wherein R5 is CH₃, CH₂CH₃ or CH₂OH.

30. A compound according to claim 16, wherein R5 has (S) stereochemistry.

31. A compound according to claim 30, wherein the pyranone 4-bond also has the (S) stereochemistry.

32. A compound according to claim 16 wherein R5 has the (R) stereochemistry.

33. A compound according to claim 32 wherein the pyranone 4-bond also has the (R) stereochemistry.

34. A compound selected from the group consisting of
 Furan-3-carboxylic acid (1*S*)-[3,3-dimethyl-1-(3-methyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-butyl]-amide
 Furan-3-carboxylic acid (1*S*)-[2-cyclohexyl-1-(3-methyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-amide
 (1*S*)-*N*-[3,3-Dimethyl-1-(3-methyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-butyl]-benzamide
 (1*S*)-*N*-[2-Cyclohexyl-1-(3-methyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-benzamide
 (1*S*)-*N*-[3,3-Dimethyl-1-(3-methyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-butyl]-4-hydroxy-3-methyl-benzamide
 (1*S*)-*N*-[2-Cyclohexyl-1-(3-methyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-4-hydroxy-3-methyl-benzamide
 Furan-3-carboxylic acid (1*S*)-[2-cyclopentyl-1-(3-methyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-amide
 (1*S*)-*N*-[2-Cyclopentyl-1-(3-methyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-benzamide
 (1*S*)-*N*-[2-Cyclopentyl-1-(3-methyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-4-hydroxy-3-methyl-benzamide

Furan-3-carboxylic acid (1*S*)-[3,3-dimethyl-1-(3-ethyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-butyl]-amide
Furan-3-carboxylic acid (1*S*)-[2-cyclohexyl-1-(3-ethyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-amide
(1*S*)-*N*-[3,3-Dimethyl-1-(3-ethyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-butyl]-benzamide
(1*S*)-*N*-[2-Cyclohexyl-1-(3-ethyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-benzamide
(1*S*)-*N*-[3,3-Dimethyl-1-(3-ethyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-butyl]-4-hydroxy-3-methyl-benzamide
(1*S*)-*N*-[2-Cyclohexyl-1-(3-ethyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-4-hydroxy-3-methyl-benzamide
Furan-3-carboxylic acid (1*S*)-[2-cyclopentyl-1-(3-ethyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-amide
(1*S*)-*N*-[2-Cyclopentyl-1-(3-ethyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-benzamide
(1*S*)-*N*-[2-Cyclopentyl-1-(3-ethyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-4-hydroxy-3-methyl-benzamide
Furan-3-carboxylic acid (1*S*)-[3,3-dimethyl-1-(3-propyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-butyl]-amide
Furan-3-carboxylic acid (1*S*)-[2-cyclohexyl-1-(3-propyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-amide
(1*S*)-*N*-[3,3-Dimethyl-1-(3-propyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-butyl]-benzamide
(1*S*)-*N*-[2-Cyclohexyl-1-(3-propyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-benzamide
(1*S*)-*N*-[3,3-Dimethyl-1-(3-propyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-butyl]-4-hydroxy-3-methyl-benzamide
(1*S*)-*N*-[2-Cyclohexyl-1-(3-propyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-4-hydroxy-3-methyl-benzamide
Furan-3-carboxylic acid (1*S*)-[2-cyclopentyl-1-(3-propyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-amide
(1*S*)-*N*-[2-Cyclopentyl-1-(3-propyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-benzamide
(1*S*)-*N*-[2-Cyclopentyl-1-(3-propyl-5-oxo-tetrahydro-pyran-4-ylcarbamoyl)-ethyl]-4-hydroxy-3-methyl-benzamide
and pharmaceutically acceptable salts thereof

35. A compound according to claim 34 having the 3*S*,4*S* configuration.

36. A compound according to claim 34 having the 3*R*,4*R* configuration.

37. A pharmaceutical composition comprising a compound according to claim 16 and a pharmaceutically acceptable carrier.

38. A pharmaceutical composition comprising a compound according to claim 34 and a pharmaceutically acceptable carrier.

39. A method of inhibiting the cysteine protease Cathepsin S which comprises administering to a patient in need thereof an effective amount of a compound according to claim 16.

40. A method for the preparation of a compound as defined in claim 16, comprising the steps of manipulating the protecting groups on a suitably protected carbohydrate derivative to effect deoxygenation at the anomeric position, introducing the R5 substituent via a ketone functionality, for example by Wittig chemistry, introducing the 4-amino group by further manipulation of the remaining carbohydrate oxygen functionality to provide a protected 4-amino-5-substituted pyranone, N-extending the amine function using peptide chemistry and adding the R'C(=O) or R'S(=O)₂ capping group.

41. A method for the preparation of a compound as defined in claim 16, comprising the steps of diazotising an O-protected, acyclic carboxylic derivative of a suitably derivatised 3-amino-4-substituted lactone, cyclising the diazomethylketone produced to afford a protected 4-amino-5-substituted pyranone, N-extending the amine function using peptide chemistry and adding the R'C(=O) or R'S(=O)₂ capping group